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NATURE, KNOWLEDGE, AND MYTH. I[1]

. . . pour plaisanter avec ses amis, il appelloit sa philosophie le roman de la Nature.—Baillet, *La Vie de Monsieur Descartes*, Paris, M DC XCI, *Preface*, p. xviii.

EPISTEMOLOGICAL reflection encounters an initial and perhaps insurmountable difficulty. It is that of circularity. Presumably, were epistemology achieved, the nature of knowledge would be understood. It would then be possible to identify knowledge wherever found. But until the question: what is knowledge? shall have been answered, it would seem to be impossible to effect such an identification. In general, how can we frame questions concerning the nature of knowledge without assuming that something or other is known? that this or that is an instance of knowledge? that such and such are the conditions within which the quest for knowledge is pursued? Perhaps it is the case that knowledge of ideal objects—mathematics, let us say—escapes this difficulty. With respect to knowledge of existence (which alone is here in question), the circularity of discourse in epistemology seems inescapable. In a sense, there is no answer to the Socratic question: how can we come to know that which we do not know? It may indeed be true that all human thinking is inherently circular. If this be really the case, there is nothing to be done about it.

It may be possible, not to escape circularity, but to render it less damaging. The circularity may be neutralized, so to speak, by the movement of epistemological inquiry itself. But epistemological inquiry must have a point of departure. Initially, this must be conceded. The initial concession may perhaps come to be justified in and through the course of inquiry which the concession makes possible. Perhaps the course of inquiry may reveal

[1] If this essay should be regarded as a feeble and presumptuous effort to modernize Cartesianism—as an experiment in neo-Cartesianism—I can but accept the estimate and description. The essay was provoked, at least as to its writing, by an exchange of communications with which John Dewey honored me. I have ventured to quote from one of his letters—but of course this does not mean that anything in this essay can be assured of the approbation of John Dewey. I have but faint hopes that it could have the approbation of René Descartes, unless he retains in the Elysian Fields that same sense of humor which Baillet ascribes to him. (The paper was read before the Virginia Philosophical Association's meeting, Nov. 14, 1945, Richmond, Va.)

why that which is conceded at the beginning was peculiarly appropriate to the nature of the inquiry. In sum, the initial concession defining the point of departure is procedural, instrumental, requested and made for the sake of exploring the nature of knowledge and of assaying its values. It seems prudent, in accord with the function of the concession, that the concession should be kept to the barest minimum.

The initial epistemological concession is matter-of-factual. What shall be taken as this matter-of-fact? There seems to be a concession involving a minimum of commitment. It is this: let it be conceded that *inquiry does go on.* In a more expanded form, the matter-of-fact, whose concession is requested in order that epistemological investigation may begin, may be described as follows. There is a kind of activity or busy-ness that does go on, here and there, now and then, and seems distinguishable from other kinds of activity which, for all we know, may go on just as well as inquiry activity.[2] The inquiry type of activity must be identified. Undeniably circularity lurks beneath any attempt to identify inquiry activity. Grant that there are certain things called physicists, say, or economists. These things may run, they may leap, they may digest, they may beat their wives. It would be urged, at least by common-sense folk if not epistemologists, that, while these things may learn from such activities, these activities are not those in virtue of which the things are called physicists or economists. The latter activities, inquiry activities, are such as purport to be knowledge-getting efforts. Let it be conceded that the activity can be identified by what seems to be its results. The activity eventuates in what may be described as a making of claims. The claims are made public by means of symbols of one or another sort.[3] The claims can be called knowledge-claims. They purport to be knowl-

[2] The language of this essay may well be regarded as uncouth, pedantic, and circumlocutory. By way of explanation I should add that I sympathize with the efforts of Dewey and Bentley, in recent papers (this JOURNAL, Vol. XLII, 1945, pp. 5–27, 39–51, 225–247, 645–662), to establish a terminology freed from the commitments conveyed in the use of traditional language. The fixed distinctions of past epistemology are scarcely avoidable if the terminology is used. This is not to deny that there are fundamental distinctions reflecting vital differences in the subject-matter of epistemology. But the problem is to find the differences and then to find the sources of the differences. Thereafter, as epistemology proceeds, perhaps the differences and distinctions may be terminologically fixed.

[3] They have some special characteristics concerning which, in advance of success in discovering the nature of knowledge, little can be said save that the characteristics are found in the claims that appear to eventuate from the type of busy-ness which is identified by what seems to eventuate from it. This is circularity, of course.

edge. Gold is malleable; tuberculosis is caused by some sort of a bug; the red shift in the spectrum indicates the movement of the source of light away from the observer; the earth is the center of the universe; or, with the shepherd in *As You Like It*, it is claimed that a great cause of the night is lack of the sun—these are samples of claims eventuating from inquiry activity. The claims seemingly eventuating from inquiry activity purport to be knowledge or to express knowledge. The activity seemingly goes on to the end that such claims may be made. Whether it succeeds in its purpose; when, if ever, it succeeds; what success is to mean; under what conditions does success occur—these questions are initially unanswerable, and may remain unanswered. If it be conceded that inquiry activity does go on, and that it results in claims of the character indicated, something more must be requested by way of concession. It is asked, as a concession, that an actor, agent, a thing to which the inquiry activity may be attributed as an activity of that thing, be granted. This agent or thing may be designated the conductor of inquiry. For the moment nothing more should be asked or could be conceded. Common sense might declare this agent to be a man. But we are attempting to be epistemologists, and assuredly know nothing of common sense and certainly haven't any. It may be that there are bodies of knowledge within which the sign "man" stands for a thousand claims representing successful outcomes of inquiry activities. But all that could be said of such claims, in view of the paucity of our initial concession, is that they seem to be instances of claims eventuating from inquiry and purporting to be knowledge, and as instances seem to be no better and no worse than other instances.

Another apparent aspect of the required initial concession of fact remains to be noted. The claims seem to be made *about* something. They seem to refer to something that, in a sense not definable, lies outside of, is different from, the claim. The claim appears to involve a distinction between the claim as such and that to which it refers, so that two things are involved. Since the initial concession is made in view of existential inquiry alone, the claims may be described as pointing to a referent that may vaguely be called existence.

Let us call the initial matter-of-fact conceded, the fact of inquiry. Its concession seemingly involves four factors: a type of activity, an activity-agent to be called the conductor of inquiry, claims, and a referent of claims. The attempt to describe the minimal fact of inquiry is obviously vitiated by circularity. What apologetic can be provided? There appears nothing to do but to follow the example, made famous by William James's recollection

of the yarns he read as a youth, of Mr. Midshipman Easy's wet-nurse. It will be recalled that Captain Marryat's hero's mother was unable to suckle her young hopeful. The emergency was met by providing a wet-nurse, a buxom country lass who nursed both the future midshipman and her own baby. All went well until Mrs. Easy discovered that the nurse was an unwed mother. The nurse sought to allay Mrs. Easy's alarm by conceding, indeed, that her own baby was illegitimate, but softened the blow by insisting that it was such a very small baby!

Alas, our epistemological baby, examined more carefully, appears to be Gargantuan. The inquiry claims are said to be expressed in symbols, and we are using symbols with which to describe the fact of inquiry. The dread figure of the logician lurks in the background, and he is accompanied by the no less menacing figure of the semanticist. Are we asking for more concessions and for the concession of a universe of symbols and all the rules and distinctions of the logician? Perhaps so. But it may be that logicians and semanticists are conductors of inquiry, and are makers of claims. Perhaps they make claims somehow differing from those made by inquiry conductors called biologists and physicists and economists. If the claim-making of the latter is marked by frequent conflict of claims, this seemingly is no less true of logicians and semanticists. It is suggested—at least *suggested*—that inquiry conductors are all alike in that their several babies have some taint of illegitimacy.

There seem to be many dimensions of the fact of inquiry. Just what is covered by the phrase "does go on"? The concession has been described as matter-of-factual. Statement of the conceded fact is itself a claim—admitted for procedural purposes—purporting to represent something existential. It is admitted that something, identified as inquiry activity, occurs, is the case, or is a state of affairs. This suggests a question: is the conceded fact, conceded for the sake of epistemological investigation, also in effect a metaphysical concession? Is it possible that the starting-point for epistemology may just as well be—or must be—the starting-point for metaphysics? It may be urged that we are in no position to define metaphysics; that we do not know whether such an enterprise of knowing is possible; and that we do not even know what we mean when we use the word. Now these points may be urged in such a spirit as to render all philosophical inquiry hopeless. A sweeping sceptical position might be taken initially. This would be to use doubt, not as a necessary procedural factor in the conduct of inquiry, but as a stubborn refusal to attempt inquiry. It appears that apologetic is again necessary. The

factual concession is provisional. If it is imprudent to describe it as metaphysical, without qualification, could not the situation be met in a practical way? The conceded fact, let us say, involves dimensions which have been regarded by one or another philosopher in the past as metaphysical. That is to say, reflection upon such dimensions might be identified by some philosophers as the type of thought known historically as metaphysical. Thus it could be urged that the concession involves the statement that something exists, and distinguishes between symbol and referent. What, then, does it mean to exist? The symbol and the referent both exist—how then do they differ in status? Questions of this type might be multiplied, and it seems clear that some philosophers, in this age or in that, would identify them as metaphysical or as pointing to metaphysical problems.

These considerations raise crucial questions concerning epistemology and metaphysics. Must metaphysics, if possible at all, wait upon the termination of the epistemological investigation? Must the very possibility of metaphysical inquiry, together with determination of its scope, its objects, and the conditions of the enterprise, await the solution of the problems concerning the nature of knowledge? Kant seems to have thought this. Or could the contrary be maintained, that epistemology, since it must have an existential point of departure, must await metaphysical determination of what it means to exist? If inquiry activity goes on, and does not go on in a vacuum—which seems to be admitted when it is conceded that inquiry activity can be distinguished from other going-ons—then inquiry activity is only a part of what is vaguely described as existence. Must we not then seek to understand the nature of existence before we can undertake to understand the nature of the fact of inquiry? The fact of inquiry, in this case, would have at least some of its dimensions determined by conclusions concerning the matter-of-factual network within which it is caught. But, on the other hand, if metaphysics be a kind of inquiry, it is an instance of the fact of inquiry; its objective is knowledge; how, then, can we decide that we do have metaphysical knowledge concerning the existential context of the fact of inquiry until we can decide what knowledge is? Or finally, must we take the position that neither epistemology nor metaphysics can go on independently of one another, that both must begin with one and the same conceded fact that inquiry does go on? If philosophical reflection must start somewhere; if its starting-point must be provisionally conceded; if the minimal concession is in itself the provisional concession of the warrantability of a claim; and if the claim points to and is a claim about something

existing, then it would appear that epistemology and metaphysics have an identical point of departure, or at least depart from distinguishable but related factors in the same fact. It could, then, be urged that the method of philosophical reflection must somehow involve a continual movement back and forth from epistemology to metaphysics and from metaphysics to epistemology, with the results of the one at every point modifying the results of the other.

Far more questions have been suggested than can be treated in a single essay. The proposed inquiry must be limited, if not arbitrarily, then at least by a selection determined by economy. Metaphysical questions must be at least subordinated. Nevertheless, something more must be said concerning the context of ideas, the point of view, from which it is proposed to view the fact of inquiry. If such a point of view be described as "metaphysical," nothing can be said except that *some* "metaphysical" point of view must be taken if epistemological inquiry is to begin. To present the fact of inquiry as the conceded point of departure, and to give a minimal description of it, is to present a body of knowledge claims which may or may not turn out to be genuine cases of knowledge. These knowledge claims must at least be acknowledged. The fact of inquiry, as an identified activity distinguished from other activities, is regarded as a bit of a larger region of matter-of-fact with respect to which an existential science might be instituted. Suppose it were urged that the inquiry conductor is an animal that breathes, digests, walks, loves, hates, as well as conducts inquiries, and that he does all these things within a context of things. On the supposition, an existential scientific inquiry might be instituted that would center about this curious animal and would include his inquiry activities as a part of the matter-of-fact in which this inquiry is interested. Breathing, digesting, and inquiring would be brought within a single domain of investigation. Now the conceded fact of inquiry is many-sided. Inquiry is conducted by a conductor who may do other things besides inquire. The conductor when inquiring is busied about things that exist, as the conductor exists. These become the referents of claims eventuating from his inquiry activities. To concede all this is to assume (provisionally) that inquiry activity is a part of a larger matter-of-factual network. We have two sets of words, not easily related to one another, with which this matter-of-fact may be described. It could be said that the conductor is a thing, his inquiry activities, like his walking or digesting, are the operations of a thing, and he is busied with things. Inquiry activity then goes on in a set of things, and

conductors are things amid things. Or the inquiry activities might be regarded as a set of events, occurring here and there, amid an inclusive set of events. Since even Gargantua must be kept within practicable dimensions, we must refrain from making excessive claims concerning the set of things or the network of events. The point may be expressed in a statement drawn from a letter recently received from John Dewey:

> We cannot speak of things, of the nature of the world generally, save in terms of our knowledge of it, while on the other hand knowledge itself must be understood and received in terms of what we know about things, about the natural world of which man and his doings are a part.

This assuredly expresses the predicament of circularity, which it is proposed to render as harmless as may be. Now a name for the matter-of-factual network is needed. It is proposed to call the matter-of-factual network, within which inquiry activities are included, and about which claims eventuating from inquiry activities are made, by the word "nature." To indicate the scope of the term, let us imitate the theologian. The latter would assuredly say: whatever can be said to be, and to exist, but can not be said to be God and is not to be identified with God, is a creature. Everything other than the Creator is a creature, or the property, the activity, the going-ons of a creature. Nature is to be used with corresponding inclusiveness. But the term must be stripped, as far as possible and for present purposes, of metaphysical implications. Doubtless the theologian means that the domain of creatures—Creation—is somehow an ordered whole. The theologian may conceive the order of creation as one for the intelligibility of which teleological ideas are indispensable. The sum-total of creatures and activities is more than a mere aggregate. It is a system. But for epistemological inquiry, at the start, with the need for reducing metaphysical commitments to a minimum, "nature" can not be used in complete correspondence with Creation. "Nature" may or may not be a "system," an "ordered whole"—that remains to be seen. Still less can it be determined as to what ideas rightly define the constitution of the whole of nature, if indeed it is a whole. Philosophical reflection may or may not discover the necessity of making a distinction corresponding to that between Creator and creation,—say a distinction between "appearance" and "reality," with "nature" signifying the order of appearances. "Nature" signifies, then, the irreducible minimum of metaphysical commitment. Conductors of inquiry, it is granted, do point to something or other and make such claims as this: that star's light is variable because it is a double star,

and the darker component regularly eclipses the brighter. The epistemologist can but say: perhaps, perhaps not. The making of the claim is granted, and it is granted that the claim is made about something or other, and all the somethings or others (if they exist) fall within a set of somethings or others alleged to *be*, according to one claim or according to another. Nature then is the word standing for what existential (supposedly) scientific inquiry activities make claims about. The epistemologist, beginning with the fact of inquiry, interested in reducing the taint of illegitimacy as far as possible, must declare: if the conductor of scientific inquiry makes claims concerning angels, then, if there exist referents rightly so called, angelological inquiries purport to achieve some fragment of natural science; if existential matter-of-fact is found to contain differences corresponding to those traditionally marked by the distinction between the "psychical" and the "physical," then there are natural psychical and natural physical objects of inquiry activities. Philology, psychology, and economics are taken to be natural sciences in precisely the same sense as physics and chemistry. All inquiry activities are natural events. In that sense even epistemology is about natural events, and is itself a natural event.

But, as an undergraduate would ask, where do we go from here? In the fact of inquiry we may discern the maker of claims, the activity that eventuates in the making of claims, and the claims. With what part of this tripartite fact shall epistemology begin? How can we keep to the barest minimum the number of claims which we must *assume* to be dependable—to be successful inquiry outcomes—despite the fact that it is *not* known that they *are* dependable? Suppose it to be proposed that we begin with the conductor of inquiry. This thing is said to be a man. Must we not ask now the question posed by the illustrious founder of modern philosophy? *Qu'est-ce donc que i'ay creu estre cy-deuant? Sans difficulté, i'ay pensé que i'estois vn homme. Mais qu'est-ce qu'vn homme?*[4] It could be urged that today we know a great deal more about what a man is than was known formerly. Perhaps. Perhaps not. The difficulties here are enormous. Looking over the history of science, one wonders if today's dependable claims may not lose that proud status tomorrow. There are many knowledges comprising large bodies of claims the referent of which is said to be man. Shall we select biological claims concerning man as peculiarly pertinent to the epistemological problem, or bio-chemical claims, or economic, or sociological, or psychological? Why one set rather than another? Or shall all these sets of claims be

[4] *Med.* II, Adam et Tannery ed., IX, p. 20.

focused upon the knowledge question? But these sets of claims seem to be not wholly consistent internally; one set may conflict with another set in at least some respects; each set may comprise some claims whose relation to some claims in another set remain to be determined. Above all, just how are these knowledges to be examined with a view to selecting the claims that are, first, most dependable and least likely to be abandoned overnight, and, secondly, that are *relevant* to the activity of the conductor of inquiry *qua* conductor of inquiry? If only we knew what knowledge is, how it is acquired, and the marks by which we may distinguish genuine claims from spurious, then the difficulty would be at least greatly ameliorated. But the assumption of epistemological inquiry is that its problems have not been solved. There are, presumably, many historical and current epistemologies and many living conductors of epistemological inquiry. But this presents us with a conflict of claims rather than with a body of doctrine universally accepted in fact. The proposal to ground epistemological inquiry upon what is said to be known concerning the conductor is hazardous. The issue is not merely theoretically difficult; it is practically threatening. There are conductors of philosophical inquiry. They must earn their livings. Somewhat brazenly, they propose to do so by conducting philosophical inquiries. Is it not then highly inexpedient to let the proponents of (say) biological or sociological or psychological claims assume too much responsibility for supplying answers to epistemological problems? If by focusing such claims upon these problems they can be solved—or if that which results is blandly accepted as solutions—just what remains for the epistemologist—and not least with respect to earning a living? It must be granted that the fact of inquiry, if inquiry activity and its results are manifestations of animal life, and if this activity falls within the wider matter-of-factual network over which biology claims some jurisdiction, must be comprised within the perspective of biology. By the same considerations, inquiry must fall under the scrutiny of psychology, of economics, of sociology, and of no one knows just how many "sciences." On the basis of the minimal metaphysical commitment involved in accepting the fact of inquiry, it could well be asked: just what existential knowledges —alleged knowledges—neither do nor can make claims concerning the conductor and his doings? It may be urged that the claims characteristically made by some of these "sciences" may be wholly dependable as claims and yet quite irrelevant to epistemological problems. Perhaps this is the case. But how is it to be decided? The seemingly irrelevant claim may be followed by others whose consequences, if valid, may be devastating. Who

would be surprised if a physiologist were to advance the claim that all philosophizing is due to excessive activity on the part of some gland? And propose, by controlling the gland, to bring to an untimely end all philosophizing and all philosophers! There seems little reason to put such a thing past conductors of scientific inquiries, even though they might regret the extinction of philosophers somewhat as a zoologist must regret that he can not study a living dinosaur. Jesting aside, how can the several sciences know what must be reckoned with in dealing with the fact of inquiry as a portion of their several stretches of existential matter-of-fact until knowledge-seeking and knowledge are understood?

It must be conceded that epistemological inquiry can not be pursued in a vacuum. Here and there recourse must be had to the bodies of claims constituting this or that science. But it is one thing to have prudent recourse to these bodies, it is quite another to do so uncritically, imprudently, hastily, while taking them over-seriously. The problem is one of selection based on relevance. As the epistemological analysis proceeds, it may gradually become possible to select from the bodies of claims those that throw some light on the problems—*as discerned at that stage of epistemological inquiry*. It would seem judicious for the epistemologist to admit no scientific claim except grudgingly and only when advance seems fostered by the admission. How any fixed set of rules can be set up for this selective process is not apparent. It appears highly probable that knowledges provide authentic claims concerning man—for example, that he is a biped, or has evolved from ape-like ancestors. These may or may not have significant bearing on the problems of epistemology. One never knows. At any rate, the case can not be pre-judged.

It might be proposed, alternatively, that we neglect the conductor of inquiry, at least initially, and examine the process itself. We may study the activity itself—what the conductor does, the attendant conditions, the things he uses and how he uses the things he does use. Conceding the fact of inquiry, it has been conceded that inquiry activity can in a preliminary way be distinguished from other activities of such agents. Presumably, as epistemological study proceeds, any advance it may achieve would permit a more and more discriminating description of the inquiry activity. The conductor might be eliminated from the study of the process by saying that, whatever the conductor may be as an object of scientific investigation and in terms of the resultant claims, he evidently has the equipment for inquiry activity since in fact he achieves it. What it takes, he evidently has. As progress is made in the study of inquiry activity and conditions, inference

can be made as to the constitution and powers of the inquirer as inquirer. If the activity involves making and using symbols, or making and using instruments, then corresponding capacities must exist in the inquiring animal. The sciences that make claims concerning this animal—psychology or physiology or biology or whatever—must then reckon with these capacities as best they can in terms of their respective contexts of ideas. But is the proposal to begin epistemology with this aspect of the fact of inquiry as promising as it seems? The activity and all attendant conditions are matter-of-fact for the making of claims. Moreover, it could be argued that, in order to understand inquiry activity, the conductor's inquiry capacities must first be understood. The same could be urged concerning the assembling and control of the conditions in which the activity goes on and the instruments used. The inquirer may read pointer-readings: but the instrument was made in order to have readings to read. A scientist might claim that spectacles are what they are because human eyes are what *they* are, and we should begin with the eyes rather than the spectacles. But this is to drive us back to the proposal to begin with the conductor of inquiry, the difficulties of which have been indicated. Moreover, what goes on inside the conductor is seemingly an integral part of the total inquiry activity. It is not inconceivable that a chemist might conduct inquiry even while eating his dinner or catching fish, far away from his laboratory. In sum, it appears that the two aspects of the fact of inquiry—the nature of the conductor and the nature of the inquiry activity—are so conjoined that beginning with either is in effect beginning with the other. If epistemology begin with the inquirer and his inquiry activity, recourse must be had to bodies of claims eventuating from many sciences. Selection as to relevance, inter-relations, and dependability is oppressively difficult. What claims amid the host of claims advanced by neurologists or physiologists, say, can the epistemologist use with comforting assurance? And this, when recognizing that inquiry activity inside the animal and also outside the animal falls within the stretch of matter-of-factual existence that neurologists and physiologists must busy themselves about? Doubtless the physiologist will make only physiological claims concerning the fact of inquiry, claims, that is to say, more or less similar to the claims he makes concerning other existential items and more or less continuous with the historical mass of claims which represent the history of his science. His very identification of the fact of inquiry will be governed by this historical fund. It is quite uncertain as to what he will take to be the fact of inquiry and as to what he will make of it. And

so with the many other sciences. There will arise many claims resulting from inquiry activity and all purporting to be knowledge concerning knower and knowledge getting. What can the benighted epistemologist make of them? A prudent use of alleged knowledges must be made. Prudence indicates that at the beginning as few claims as possible should be entertained. But how can prudence be defined? To reply that we should admit as few claims as possible helps very little. Those to be provisionally accepted should be selected in view of their serviceability in forwarding the efforts of the epistemologist. How is a practical test of serviceability to be formulated?

One factor in the fact of inquiry remains to be considered. The conceded fact of inquiry is that inquiry does go on, that it involves the activity of an agent, and that it eventuates in claims which purport to represent existence by means of symbols. Thus, the atomic weight of X is Y. Now a similarity of character, of form, of constitution, seems to obtain with respect to claims eventuating from inquiry activity directed upon existence. If it be agreed that epistemology must have a point of departure, if it be agreed that the provisional initial concession of the fact of inquiry reduces the taint of illegitimacy as far as possible, if it be further agreed that selection as to warrantability from the myriad of claims must theoretically await some advance in epistemological inquiry, then the proposal to begin with the character of the claims may provide a starting-point of least commitment. Epistemology, at least in its first stages, is not prepared to distinguish valid from invalid claims, well-attested from insufficiently attested claims, warranted from unwarrantable claims, proven from not proven claims, more probable from less probable claims —or, if you will, true from false claims. To provide a basis for such distinctions, to determine their import, to find out how a Cartesian passion for certainty can be satisfied (if it can be satisfied), must be the objective of epistemology. It is the lack of such principles of estimate which drove us away from the conductor and his activities to look at the claims. In proposing to look at them, it was noted that we can not now classify claims as true and false existential claims, or as probable and improbable, or as attested and unattested. It may be hoped that there are at least some true, or probable, or well-attested claims in the many sets of claims. *Provisionally*, as need arises, it may be expedient to select some claims and treat them as if warranted, with the hope that in the end there may be epistemological justification for such provisional devices. But strictly regarded, we can but look at the claims which purport to be knowledge in order to find out, if

possible, what knowledge would be if there should happily be some knowledge.

Expediency may be somewhat more narrowly defined in a strictly practical sense. The phrase "inquiry activity" rather than "scientific inquiry" has been preferred because of the latter's eulogistic connotations. It is commonly believed that scientific inquiry is highly organized as compared with random occasional exercises of intelligence with which ordinary folk are said to solve problematic situations. There may be important differences between the procedures of a chemist (say) and one's efforts to work out a bus-and-railway schedule. But a description of the differences, and, more importantly, appraisal of the ordered activity of the scientist, must await some measure of success on the part of the epistemologist. Now it *may* be the case that scientific inquiry deserves eulogy. It *may* be that the procedures followed by the scientist define not only a way but *the* way, *even the only way*, of arriving at true or well-attested claims. It *may* be that the powers and resources and matter-of-factual stuff exploited in and by scientific inquiry constitute in any age all that such a word as "knowledge" can stand for. But the epistemologist, beginning his efforts, can not do more than admit that all this may turn out to be the case. In view of these considerations, which could be greatly expanded, the epistemologist might offer an apologetic for taking the bodies of scientific knowledges as the best available samples of claims. He might exclaim: where, if anywhere, can one find bodies of claims more likely to disclose upon examination the meaning of, and method proper to, inquiry, where are we more likely to find knowledge if indeed there is any? Abstractly, he might admit that even in the total body of scientific claims purporting to be knowledge there may be no claims deserving to be called knowledge. But scientists, he might point out, distinguish between sciences and pseudo-sciences. Between what so-called astronomers call astrology and what they call astronomy, common-sense folk and astronomers may make what is to them a satisfactory distinction. But philosophers can not indulge in the luxuries of common-sense folk and scientists. Nevertheless, as a matter of expediency, the epistemologist might propose to look at the sets of claims which scientists aver to belong to the history of the several sciences and to constitute what scientists call knowledge. Even if the claims in what scientists call pseudo-sciences look very much like the claims in what they call sciences, this may not be astonishing because some claims in what they call sciences may turn out to be pseudo-scientific. It has happened. In any case, if there should be, in what scientists today call scientific

knowledges, any claims that later on will be described as insufficiently attested, as unproven, as mistaken, as not genuinely scientific, this would suggest that science today and in the future may resemble science in the past, that is to say, a curious amalgam of the scientific and the pseudo-scientific. It would also suggest that claims are in some degree very much alike, for otherwise one would expect that the pseudo-scientific claim would be expeditiously cast aside the very moment it was formulated. This appears not to be the case. Even scientists have their troubles.[5]

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COMMUNICATION

ONE of the fertile ideas advanced in John Grote's *Exploratio Philosophica* is that of experience as a process of communication. A brief examination of that idea, both in itself and in its bearing on some lines of recent thought, is likely, I think, to prove profitable—not least because some of the points involved, though familiar enough, have become through that familiarity strangely confused, and have led to the adoption of positions which can hardly stand careful scrutiny.

We find ourselves, says Grote,[1] in a state of things, or universe, full of active natural agents which communicate with our bodily organization, more specifically (but not exclusively) with our various sense-organs. This communication is accompanied by consciousness or feeling, and becomes, when properly noticed, the basis of knowledge. In the process, the body "is not only a frame, vessel, focus, for reception, but also a machine for action," and both aspects have to be kept in mind. Phenomenal reality is the resultant arising from the comparison of the information supplied by our various senses, and we discover in it not only the activity of impersonal natural agents but evidences of activity directed by what appear to be intelligences akin to our own. Because this state of things hangs together, it must always be remembered that any aspect of it which we select for discussion is conditioned by the entire process, which continues its course in and around our critical activity so that every point has ultimately to be reviewed in relation to its context.

The consequences of this primary communication, though they

[5] To be concluded in the next issue, No. 11.

[1] References will be found in the first three chapters of the *Exploratio*, Part I; readers unfamiliar with that work will find it profitable to look them up.

set the lines for all subsequent experience, are not uniform. Left to itself, it would be unsatisfactory, an experience mixed and confused. What helps to reduce it to order is partly the distribution of items according to our various senses, partly the different degrees of interest which our minds direct to it. But as information is more readily gained in some directions than in others, we come in some fields to be more aware of the collected and codified information than of the ways in which we obtained it, and in others to be more aware of the differences of opinion which may be entertained with regard to it, and of the attempts to mitigate them by discussion with our fellows. There is more agreement about physical knowledge than there is about the contents of our minds and about what we should do with them. Thus it comes about that we tend to think of communication as restricted to human intercourse, and to forget that the latter is only one aspect of what arises at the basic perceptual level.

In short, our sensory equipment puts us into communication with a universe out of which, as the phrase goes, we make what we can. We distinguish the various kinds of information it offers, and should not be surprised if they are not all alike. If we find both inanimate and animate components of our universe, and if they present different features, let them do so; we need not labor to reduce one to the other. No view of either is completely forced upon us; otherwise there would be more agreement than there is. "In phenomenal or physical view," says Grote, "it is possible that a hundred years hence what we call matter may be looked on as the result simply of the action of various forces"—a prophecy much nearer the mark than those of some of his contemporaries who thought themselves more competent in physical science. We have passed from the four elements of antiquity, through the views of the alchemists and the phlogiston theory, to the electrons and quanta of today, without finding ourselves, except metaphorically, in a different world.

As soon as we have divided our universe into animate and inanimate components, we find a wide difference in the results of the two sorts of communication. The range of our information has been vastly extended by scientific instruments of various sorts; but the depths of the universe continue to reveal the same elements and the same sorts of radiation, so that the physicist utilizes with equal confidence the spectrum of a specimen in the laboratory and the spectrum of an enormously remote star. Inanimate nature, if questioned in the same way, provides us with answers of the same sort, even if they can not always at first sight be fitted into the framework of existing knowledge. But with human intercourse it is not so.

Even among those who use the same language, understanding is not immediate and complete; and it is a conspicuous fact of human history that multiplicity of language has prevailed as far back as we can go, and as widely as we can inquire. We must accept this multiplicity as no less basic in the analysis of experience than the unity of certain sorts of physical evidence.

If we take regularity and uniformity of behavior to be conspicuous marks of matter, we can find a corresponding brief description of mind in Professor Singer's dictum [2] that it is what enables purposive beings to differ in their aims or to pursue the same end with differing skill. We do not attribute the differences among material bodies to differences in the skill with which they pursue an end; we do not suppose that a diamond is a more perfect crystal because carbon is more skilful in crystallizing, or that different skills among the elements account for their different melting points. But we do see that some animals are more successful in getting a living than others are, and that some species show decided ingenuity in dealing with strange situations. All this can be granted and applied without an exact delimitation of the place of mind in our universe, or a precise grouping of its various manifestations.

Turning now to the process of communication itself, we find that each instance of it conveys information, but that the conveyance is by a means which is not identical with what is communicated. This conveyance depends partly on some sort of physical disturbance and partly on the effect of that disturbance on a sense-organ. Further, in the case of communication initiated by an intelligence, there is a signal, either by direct sense-impression or by a form of words, spoken or written. We see or hear because certain vibrations fall on eye or ear; what we see or hear may be a so-called natural object or an object set up or directed by human agency. In ordinary experience these various factors are so intermingled that we largely take them for granted, and concentrate on what is communicated; but the partial analysis of them leads to confusions which we shall shortly examine more closely, and only a complete analysis gives hope that confusion can be avoided.

The human body, as a natural object among other natural objects, receives one-way communications from the other objects about it; so do the sense-organs which are parts of it. But the body as the seat of intelligence sends out communications of its own, and devises means of extending their range. It is elementary, but necessary, to keep these distinctions in mind. A human voice, for

[2] *Mind as Behavior*, p. 80.

instance, can be transmitted through a speaking-tube or a megaphone, through a telephone wire and receiver, or through a portable or fixed radio transmitter. Just so, a written message may be transmitted on a written paper, or reduced to a telegraphic code, or sent by teletype, or disseminated in printed form. In each case, what is said has no necessary connection with any difficulties of transmission; the latter may be better or worse, but our interest is in getting the message through, and in what it says. If a telephone conversation is broken off, the natural assumption is that what has "gone dead" is the instrument, not the speaker at the other end of the line; though the latter conclusion is sometimes correct, it usually is not.

Every communication conveys information; but it may be information which at the time we do not want, because it duplicates previous information or is irrelevant to our present concern, or which we can not utilize, because of inattention or ignorance. To accomplish, we must concentrate attention; but if we believe that what immediate attention reveals is all that there is to notice, we may fall into error. But we are able to expand the field of attention by all sorts of instrumental devices, which, when employed, are felt to be simply extensions of our initial sensory equipment. Lenses, recording devices of all sorts, the vacuum tube, take their places in the steady expansion of human experience, and sooner or later their contributions are more or less successfully integrated with the structure of existing knowledge. The purpose of multiplying and perfecting them is to assure that the information which they bring is as fully and accurately received as possible; and it is pointless to suppose that, as information, it is either more or less valuable because of the mode of its arrival. What we have to make of it, or can make of it, is another consideration; and it is there that dispute over its value properly arises.

Our sensory equipment, as Grote remarks, is that of "typical terrestrial animalhood," which indicates that it is such as has been found serviceable to our getting along in this world, and was not solely intended as a means toward disembodied knowledge. It is therefore not very profitable to object to its limitations, or to speculate as to changes in our experience which differences in it would have made. "Ideally," says Eddington,[3] "all our knowledge of the physical universe could have been reached by visual sensation alone—in fact, by the simplest form of visual sensation, colorless and non-stereoscopic." It is not clear how a creature so restricted could have survived under terrestrial conditions; certainly none

[3] *The Philosophy of Physical Science*, p. 197.

such is known to us, and the question of its possible knowledge of physics seems hardly worth discussing. Again, Lindemann asserts[4] that if we had been "compelled to use measuring-rods containing but a few particles, it is improbable that the concept of distance . . . would ever have arisen." But we were not so compelled, the concept has arisen, and our best course is to use it as it stands.

There was a time when it was especially the fashion to depreciate the human eye as an optical instrument; this, when optics was thought of as the science of visible light, had a certain plausibility. Now that visible light has been assigned its place in the entire spectrum of radiation, a different view prevails, the verdict of a recent writer[5] being that "the receptors of light in the eye in the middle of the visual region approach very close to the ultimate sensitivity set by the quantum nature of radiation, and the eye itself is an extraordinarily delicate though sensitive radiation detector." The one power which the eye (like the other sense-organs) does not possess is that of storing up impressions; that task is carried out elsewhere in the organism, or, outside it, by the various means which humanity has devised, from pictographs to photography.

If we now take the nervous system with its appended sense-organs as the basis of our communication with the universe, it is obvious that the information it brings us is not mainly concerned with the body of which it forms a part. Physiology is in a sense the youngest of the sciences, and we are still learning much about the workings of our bodies, many of which are not presented to us in consciousness at all, and are in no way under our volitional control. If, as some hold, we know only what our nerves are directly in contact with, this would be strange; but the obvious truth is that the primary function of the nervous system is to enable us to get about in the world, and to direct our movements with a fair degree of intelligence. Some of the information which we collect while thus engaged is undoubtedly about our bodies; but the greater part of it is not, and both the collection and our subsequent reflection on it depend entirely on our ability to keep alive during the process. If we had to learn and reflect in order to live, we should have little time in which to live and learn.

The means of communication, then, exists; and to draw an analogy between the mind within it and a humanly devised system, such as a telephone exchange, has seemed a natural explanatory device. Karl Pearson, in particular, envisaged the mind as "seated

[4] *The Physical Significance of the Quantum Theory*, p. 81.

[5] E. J. Bowen, *The Chemical Aspects of Light* (1942), p. 161. See also S. Hecht, "Energy and Vision," in *Science in Progress* (1945), pp. 75–97.

at the brain-terminals of the sensory nerves," but as in the position of a telephone clerk who experienced nothing but the sounds coming in over the wires. He would know nothing of the world beyond these sounds; he would experience only change, not motion; he could neither act nor know whether or not he had acted; he would, in short, be entirely passive. I doubt if any reader would recognize this as a description of his own mind, or of any telephone clerk he has ever met or heard of. Pearson's supposed clerk would have had to be spontaneously generated as an adult in his exchange, since no isolated infant could have grown up in it; and he could not be an operator in the normal sense of the term, for he would by definition be unable to perform any operation.

The initial plausibility of this strange idea rests entirely on our previous acquaintance with actual telephone exchanges. In these the business of a clerk is not to listen to incoming messages with a view to self-instruction, but to make connections between subscribers. In so doing he sees and feels the apparatus before him, and can be watched by an observer as he does so. But no human being knows anything directly about his own nervous system, or, unless he has studied the matter anatomically, about that of anyone else. We neither see nor manipulate the terminals of the sensory nerves; on the contrary, we know that in reflex actions the contact is made with no conscious intervention at all. After a nervous system has been dissected and laid out, we can perceive that it has a certain resemblance to a telephone system, in so far as they are both, under certain conditions, vehicles of communication; but that does not mean that they are intrinsically alike. In the same way, an actual telephone clerk is a specialized kind of human being, intelligible in both aspects; but Pearson's clerk is merely a figment of the imagination, intelligible in no aspect whatever.

It is strange that a notion so intrinsically absurd, and so vigorously dissected by Fullerton [6] forty years ago, should still be going about; yet it has been revived by Eddington in at least two forms. In one [7] the mind is pictured as "an editor in his sanctum, receiving through the nerves scrappy messages from the outside world," which "arrive in code" and are "made up into a presentable story." Yet it would seem to be the nervous system, not the mind, which performs this editorial function, for it is "this free translation of the original messages that our consciousness becomes aware of." If this means that the mind merely reads a news account already produced, the production remains to be accounted for, and the mind is purely passive so far as the story is concerned; and the

[6] *A System of Metaphysics* (1904), ch. XXII.

[7] *New Pathways in Science*, p. 4.

matter is not clarified by the further statement that "it is only our ends of the fibres that we actually know." This, as we have already seen, is not the case; and the whole metaphor seems a roundabout and confusing way of saying that the mind puts its own interpretation on the information it receives—surely neither a new nor a startling discovery.

In the second form[8] the mind becomes a central receiving station, reading the dots and dashes of the incoming nerve-signals, which become familiar by frequent repetition. But since a station can not be *like* its call-signal, the signals which affect our sight and touch can resemble neither the supposed external objects which broadcast them nor the sensations which they awake in our minds. However, our acquaintance with actual broadcasting stations is not in the least limited to their call-signals; we may have seen actual stations, we can easily see pictures of them, we listen to their programs, we know that they are built and operated by men like ourselves, just as are telephone exchanges and newspaper offices. No one, I suppose, has ever imagined that a station is like its signal, any more than a written letter is like its sound, or a book like a printing-press, or in general any product like what produces it. Nor is it clear why Eddington calls this communication indirect and remote; assuming that the means of communication is reasonably efficient, it may make little difference whether the message has travelled a few hundred yards or many thousand miles.

It is impossible to escape the conclusion that Eddington confuses a code and a cipher. He is fond of repeating that the messages arrive "in code," as if that made them mysterious; whereas a code is merely a convenient way of reducing words to transmissible form. The Morse code of longs and shorts is as intelligible as any other alphabet; but, like any other, it has to be learned. Messages may come into a newspaper office written on paper, or over a telegraph wire, or by telephone or teletype; if they are correctly transmitted and intelligently received, the mode of transmission makes no difference to their meaning. But any alphabet or other system of signs can be used as a cipher to conceal meaning from those who are not intended to understand it; and that is an entirely different use. The various communications of the natural world can not be understood with equal ease; some were learned early, some only lately, some, like cosmic rays, are still puzzling. But I know of no evidence that any natural agents are deliberately trying to conceal their real nature behind a cipher.

When Eddington goes on to speak of our knowledge as a process of deciphering, he arrives at another dilemma. It is, he says, "an

[8] *Science and the Unseen World*, pp. 33–36.

astonishing feat of deciphering that we should have been able to infer an orderly scheme of natural knowledge from such indirect communication." But it is still more astonishing when we reflect that it is a process which must begin at a very early age, when we can hardly speak of inferring, much less of deciphering, and that we must also attribute it to the animals, who seem to live in a world which in its main attributes resembles ours. Indeed, it is so astonishing that I for one find it frankly incredible. If there were not an orderly scheme in the world, how should we ever grow up in it? And if there is one, why is it so strange that we should know it? If we did not, our survival would surely be unlikely. Theoretical physics is an admirable pursuit, but it is hard to believe that the entire fabric of life is built on it.

From the point of view of survival we can also better appreciate the integrative aspect of sensory experience. Eddington is ready to dismiss it scornfully, saying that most of our senses are "redundant," and "merely" corroborate each other. But in the tasks of actual life such corroboration may be important even to a matter of life and death, as the animals know even better than we. Sherrington notes that the "five" senses have remained five through recent evolution, the course of which has been to bring them into ever closer touch.[9] "The integration of this sense with that sense has helped to implement both. Not new senses but better liaison between old senses is what the developing nervous system has in this respect stood for." It requires a philosopher to assert seriously, as Berkeley did, that the contributions of the various senses are entirely distinct, and refer to distinct objects. Presumably he had never stood on a ladder, trying to follow directions called out to him by someone on the ground; but numerous persons have done so, and have found it entirely feasible to coordinate the different sense-impressions into unified action.

This sensory integration is also sufficient to preserve us from undue concern over the alleged fragmentariness of experience which has disturbed some philosophers. H. H. Price, for instance, argues[10] that the Given is "a mere driblet of fragments with short continuous stretches here and there" which forces us to postulate a set of sensibilia to patch up the veil, "without which there is nothing before our mind which could properly be called a world at all." There is nothing to prohibit such postulation; but I doubt if most persons find the case so desperate. The sun behind the clouds, to take Price's own example, is not necessarily "postulated"; there is sufficient indication of its presence, in diffused

[9] *Man on his Nature*, p. 279.

[10] *Hume's Theory of the External World* (1940), p. 81.

light and other phenomena, to prevent our worrying about its continued existence. In other words, the intermittence of communication is so familiar to us that we do not expect to receive continuous messages from natural agents, any more than we suppose that a telephone line must be in continuous operation; nor are we surprised when the apparatus itself occasionally operates in queer ways, or even gets temporarily out of order.

When we inquire into the warrant of these sensory messages, the weight which should be given them, the extent to which they fit together, we pass into a different field, where the use of logic and language becomes paramount, and where we must deal with the features which, we have already seen, are characteristic of communication between human beings. To discuss them would belong to another occasion; but it is worth remarking here that the making of instrumental records, which plays so large a part in modern science, has its own traits, and can not always be taken for granted. Logically, as A. J. Ayer says,[11] we need not draw any distinction between signs made deliberately by human beings and those derived from nature or machines; but practically we find that machines have to be made by human beings and put in the places where we find them. No one would expect to find a recording instrument on the summit of an unclimbed mountain, or buried under a Carboniferous stratum. It is easy to forget how much our information at any given time depends on the number and quality of the available scientific instruments, and how short is the period that many such instruments have been in use.

Thus the analysis of communication reveals a basic agreement which is determined by the necessary conditions of terrestrial existence; a growing area of agreement as to the physical agents which constitute these conditions; and a wide area of disagreement over matters which fall particularly in the sphere of human discussion. One-way communication requires only proper understanding and proper adjustment to action; it is not likely that the stars are concerned with what we make of spectrum analysis. But two-way communication is a much more delicate matter, and we need not be surprised that it is less productive of agreement. After all, it is not a small thing that in considerable tracts of experience we can, in Grote's phrase, find truth that answers our action and harmonizes all our sensitive powers and all the different experience of different men. But it does so for various reasons in various cases; it does not follow that we can agree in all fields with the same readiness that we seem able to do in certain fields of physics.

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[11] *The Foundations of Empirical Knowledge*, p. 165.

BOOK NOTES

A State University Surveys the Humanities. Edited with a foreword by LOREN C. MACKINNEY, NICHOLSON B. ADAMS, HARRY K. RUSSELL. Chapel Hill: The University of North Carolina Press. 1945. xi + 262 pp. $4.00.

This volume is a contribution to the commemoration of the University of North Carolina's one hundred and fiftieth anniversary and has for its purpose "to show that the humanities are not merely a group of academic subjects, but that they represent an ideal which can permeate all activity" (p. vi). The authors and editors are members of the faculties or alumni of the University. The volume is a loose collection of essays rather than a carefully planned and logically integrated discussion. In consequence, there is a certain lack of balance and some covering of the same ground. The attempt on the part of some of the authors to do too much results in several cases in interpretations and pronouncements which are too broad to be adequate. For example, in Chaper VIII, the author undertakes to give an analysis, history, and interpretation of art in five and one-half pages. The essay on the biological sciences (Chapter VI) devotes two pages to education in the past and present and four pages to an outline of a complete scheme of education.

For the most part, the authors are modest and reasonable in pointing out the humanistic values of their subjects, though the essay on mathematics and the physical sciences is unfortunately exaggerated in this respect, as well as in style. More than one skeptical eyebrow will be raised upon reading the statement, in the chapter on "Business," that "Business or economic processes are themselves opening the paths by which the Christian Humanist principle and the democratic ideal can penetrate its area . . ." (p. 189). We have here a promise of the realization of higher values in "a future that appears ever near but never nearer," as Norman Foerster points out in Chapter XVII. It is pertinent to mention in this connection the fact that in these essays, as in so many others of the same type, the professors fail to distinguish between the ideal conception of a "subject" and the way in which it is actually taught on the campus. By way of contrast, the essay "Law," by an associate justice of the Supreme Court of North Carolina, is an unusually judicious and realistic evaluation.

Members of the philosophical profession will find much in the book to interest them. There is first of all the disposition on the part of several of the authors to base their arguments on philosophic grounds or to draw their morals in philosophic terms. Paul Green, for example, bases his case for the creative arts on Hera-

clitus' doctrine of the flux. Archibald Henderson insists that "the hard and fast philosophic contrast and distinction between science and art as noumenon and phenomenon is the fundamental cause of the present dilemma in education" (p. 145). It is doubtful if professional philosophers will find these interpretations convincing.

The chapter on philosophy and religion is by Helmut Kuhn. According to the author, philosophy is the real integrator of the humanities because it alone identifies the essential "humanity of man." Intelligence is not merely an endowment added to man's animal nature but a power which "informs and transfigures his animality." It enables him to "observe" the world. It also gives him a feeling of freedom in "an orderly, i.e., law-determined world." The implied contradiction can be resolved only on the assumption of the existence of a divine Maker who endowed his creature, man, with the power of self-surrender and service to Him, God. The author agrees that logically this argument rests on the traditional and confessedly inadequate argument from design but affirms that it is given strength by "the wisdom of the ages and the truth of revelation." The argument and the objections to it are familiar to philosophers and require no further comment.

Two essays in the book merit special commendation. The concluding essay, "The Future of the Humanities," by Norman Foerster, which has also appeared as a separate publication, is a wise and sensitive study and an impressive performance. The essay by Howard W. Odum on the social sciences (Chapter IX) is the most significant of the subject-matter studies because it is the only one which undertakes to explain the contemporary confusion in liberal education in terms of its most important cause, namely, the fact that our civilization is "moving away from" our education and that the traditional liberal arts college represents a "cultural lag." The reader may find some comfort, though not much, in the thought that, though no individual has the power to alter the course of civilization, he may personally remain loyal to the out-dated culture, if he is willing to pay the price.

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Physics and Experience. BERTRAND RUSSELL. (The Henry Sidgwick Lecture, delivered at Newnham College, Cambridge, 10 November, 1945.) Cambridge: At the University Press. New York: Macmillan Company. 1946. 26 pp. 50¢.

The bob-tailed dog trying to bite the shadow of his tail has an easy job compared with the one Russell sets himself in *Physics and Experience.* The problem of his lecture he says is this: "Assum-

ing physics to be broadly speaking true, can we know it to be true; and if the answer is to be in the affirmative, does this involve knowledge of other truths besides those of physics? We might find that, if the world is such as physics says it is, no organism could know it to be such; or, that if an organism can know it to be such, it must know some things other than physics, more particularly certain principles of probable experience."

I take it we may legitimately consider Bertrand Russell to be an authentic instance of the "organism" he refers to above. If, then, Russell should find that the world is such as physics says it is, it would follow that at least one "organism" had found physics to be true. Or, if Russell seriously and not merely verbally assumes that physics is, broadly speaking, true, then it follows that at least one human being or one organism *can* know physics to be true—within, of course, the limits and grounds of the "assuming." Where then *is* Russell's problem? To know that physics is true, an organism would certainly have to know *more* than the physics that is known to be true—unless one holds that the truth of physics is or can be known by direct, self-illuminating, self-justifying, self-verifying inspection. That the "more" that would have to be known would have to be more than "certain principles of probable inference" is obvious to anyone but the bob-tailed dog or the self-defined and self-strait-jacketed solipsist. For the principles of probable inference are not Mosaic revelations handed down directly by God and perpetuated among the human organisms by repetitious transmission in the form (if not in the manner) originally received. The theory of probable inference has itself had an actual historical career involving, to mention only a few things, the independent existence of many different individual organisms (familiarly known as men), books, writing materials of various sorts, printing presses, languages, cultural associations of ramifying complexities, publishing houses, and book salesmen. To question the story of Mt. Sinai *is* to question the *kind* of authority claimed for the Mosaic Tablet by the orthodox or fundamentalist. Similarly, but not identically, to question *our knowledge of* the authenticity and reality of the historical career of the theory of probable inference *is* to question *our knowledge of the theory itself*. For without that historical career, that theory could neither be for nor known by the organisms Russell refers to, namely, human beings or men.

With his usual charm and logical inconsequentiality when dealing with the relation of physics to experience, Russell in the constrained limits of a few pages summarizes his well-known views

on perception, mind and body relation, visual and physical space, and causality.

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The Creative Mind. HENRI BERGSON. Translated by Mabelle L. Andison. New York: Philosophical Library. 1946. 307 pp. $3.75.

Bergson was a cripple in his last years, yet his mind was alive and his spirit luminous. *The Creative Mind* (*La Pensée et le Mouvant*) was issued in this final decade, though the contents go back to an earlier period of his life, when Zeno's paradoxes had driven him from Spencer into the ranks of the French Spiritualists, and before Plotinus had helped make him a Catholic, in desire, though not in fact.

The themes are characteristically Bergsonian ones: time is creative, and can be grasped only in intuition; many of the problems of metaphysics, notably those of the first cause and the order of the world, are pseudo-problems; science is true as long as it does not attempt to fathom the spiritual; and to know a philosopher we must enter him and penetrate to the spark-center of his thought. Fortified by excellent metaphors, Bergson optimistically assures us that man is inherently good, that cumulative growth is unceasing, and that our hands and our minds will always create discoveries. There are great lights about to shine on the horizon.

It is in his tribute to Claude Bernard that Bergson sounds the call of his own integrity, to which his books, his friends, and his actions, testify equally:

"Let us strain our understanding: break, if need be, all our frameworks; but let us not claim to shrink reality to the measure of our ideas, when it is for our ideas, as they grow larger, to mould themselves upon reality."

Bergson does not have the intellectual vigor of the great philosophic builders or analysts, but he does have modesty, poetry, and integrity, and so he may not fall short after all.

BEN-AMI SCHARFSTEIN

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NOTES AND NEWS

The 1946 meeting of the American Society for Aesthetics will be held on September 12, 13, and 14, at the Chicago Institute of Arts. Papers submitted for the program should be sent to the Chairman

of the Program Committee, Dr. Thomas Munro, Cleveland Museum of Art, Cleveland 6, Ohio, before June 15, 1946. They must not exceed 2,000 words.

The Forty-third Meeting of the Eastern Division of the American Philosophical Association will be held at Yale University, New Haven, Connecticut, December 26–28, 1946. Unforseen difficulties in planning accommodations have made it impossible to meet at Cornell University.

There will be two panel discussions in which prominent proponents of divergent positions will be invited to participate. One will be on *The Nature of Man;* the other will be devoted to *The Contribution of Philosophy to Education.* There will also be two periods devoted to concurrent sessions for unsolicited papers contributed by members of the Division. Three of these sessions will center on the following topics: *The Bearing of the Arts on Philosophic Issues; What Is Empirical Method?;* and *Planning and Democracy.*

Arrangements with this JOURNAL for the publication of papers to be read at the meeting require that such abstracts (not more than 300 words in length) be in the hands of the Secretary, Roger W. Holmes, Mount Holyoke College, South Hadley, Massachusetts, by October 15th. The program committee will be greatly aided in its work if a complete draft of the paper to be read is submitted with the abstract. The limit of 20 minutes in reading time for papers presented at the concurrent sessions will be strictly enforced.

A Conference on Measurement of Consumers' Interest is to be held at the University of Pennsylvania, May 17 and 18, 1946. The sponsoring groups, the Departments of Psychology, Statistics, Marketing, and Philosophy, have as their aim the promotion of intimate discussion among those engaged in work on the very different aspects of this new problem of experimental method: the measurement of "consumer interest." The Conference will include formal and informal sessions on general methodology, statistical methods, sampling techniques, preference evaluation, and writing of specifications. At the 9:30 A.M. session on May 18, on the "Meaning of Measurement," the speakers will be W. Edwards Deming, C. W. Churchman, and E. A. Singer, Jr. For further information, address C. W. Churchman, the College, University of

Pennsylvania, Philadelphia 4, Pa. The Committee welcomes participation of representatives of institutions and associations engaged in this and allied research.

TO THE EDITORS OF THE JOURNAL OF PHILOSOPHY:

In his letter to you, published in this JOURNAL, Vol. XLIII (1946), p. 196, Dr. Morris states that my article on "Peirce's Theory of Linguistic Signs, Thought, and Meaning" (this JOURNAL, Vol. XLIII, 1946, pp. 85–95) focussed its "attention upon the historical problem of how far my views do or do not agree with those of Peirce's." Since Peirce was the original formulator of the pragmatic position, and gave it its name, the historical question certainly has its rights, not to be lightly waived aside. But the issue, as stated by Dr. Morris in his letter, is much broader than this particular historical aspect. As far as concerns the views of Dr. Morris, the attention of my article focussed upon his radical misconception of the scope, intention, and method of *Pragmatism*. It was open to him to say that Peirce, James, and the present writer had made a serious mistake in taking the pragmatic position to be one which brings together in one system what *he* regards as the three distinct topics of semantics, logic, and pragmatics—in *his* sense of the term—and that he is correcting that mistake by putting Pragmatism in its proper niche. But he has produced no evidence from any one of the supposed exponents of pragmatic doctrine to warrant his statement that it is concerned with "the study of the relation of signs to scientists" and/or to the "users" of signs. It is to be hoped that in his forthcoming book Dr. Morris will take the opportunity to make it clear that he is putting forth on his own account a radically new version of the subject-matter, intent, and method of pragmatic doctrine, or else will bring forward evidence that others who have written in the name of that position have actually excluded the theory of logic and the problem of the connection of signs with "objects" from the scope of their theory. The present writer, as the author of a volume called *Logic: The Theory of Inquiry*, will be particularly interested in seeing evidence of that sort. The alternative is that stated above: A plain declaration by Dr. Morris that he is engaged in correcting the serious error of those who have previously written in the name of Pragmatism.

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